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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/586,775	06/05/2000	Gil Vinitzky	P-2596-US	7937

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EXAMINER
DO, CHAT C

ART UNIT	PAPER NUMBER
2124	6

DATE MAILED: 07/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/586,775	VINITZKY, GIL	
	Examiner	Art Unit	
	Chat C. Do	2124	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 June 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 3-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Hancke et al. (U.S. 3,673,399).

Re claim 3, Hancke et al. disclose in Figure 1 a method comprising determining a parity of a memory index (col. 2 lines 4-6), where a first data point of a pair of input data points of a first stage (Pass 2) of a Fast Fourier Transform calculation is stored in a first memory space at a first address corresponding to memory index and a second data point of pair is stored in a second memory space at a second address corresponding to memory index (col. 1 lines 35-42); if parity is of a first parity value (table II wherein the first parity value is the memory location col. 5 lines 14-18), storing a first output data point of first stage at first address in first memory space and a second output data point of first stage at second address in second memory space; and if parity is of a second parity value (table II wherein the first parity value is the memory location col. 5 lines 14-18) storing first output data point at second address in second memory and second output data point at first address in first memory space.

Re claim 4, Hancke et al. disclose in Figure 1 the method further comprising: storing an output data point of second stage that is associated with first output data point at the address in the memory space where first output data point was stored; and storing an output data point of second stage that is associated with second output data point at the address in the memory space where second output data point was stored (col. 1 lines 71-74).

Re claim 5, Hancke et al. disclose in Figure 1 a method comprising: determining based at least on a parity of a memory index (col. 2 lines 4-6), whether to store an output data point of a first stage (Pass 2) of a Fast Fourier Transform calculation in a first memory space at a first address or in a second memory space at a second address, where a first data point of a pair of input data points of first stage is stored in first memory space at first address and a second data point of pair is stored in second memory space at second address, and where first address and second address both correspond to memory index (col. 5 lines 10-20).

Re claim 6, Hancke et al. disclose in Figure 1 a digital signal processor comprising: a first memory space (24) to store a first data point (OP0, OP3, OP5, OP6, OP9, OP10, OP12, OP15, IP17, OP18, OP20, OP23, OP 24, OP27, OP29, and OP30) of a pair of input data points of a first stage (Pass 2) of a FFT calculation at a first address corresponding to a memory index (as seen in table II); a second memory space (25) to store a second data point (other data points that are not listed above) of pair at a second address corresponding to memory index; and means for determining based at least on a parity of memory index whether to store an output data point of first stage in first

memory space at first address or in second memory space at second address (as seen in table II).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being obvious over Hancke et al. (U.S. 3,673,399) in view of Avellar et al. (U.S. 3,971,577).

Re claim 1, Hancke et al. disclose in Figures 1 and 9 a method for in-place (col. 1 lines 35-40) memory management in a DSP architecture performing a Fast Fourier Transformation upon a sequence of N data points (N = 32 in Figure 9) and the sequence numbered from 0 to N-1. The method comprises storing each of data points (after first pass) numbered from 0 to (N/2)-1 in a first memory space X (24) and each of data points numbered N/2 to N-1 in a second memory space Y (25); for each FFT stage 0 (Pass 2 in Figure 9) data point grouping (0&16, 1&17, 2&18,...,15&31) comprising a first data point of data points in first memory space X (0, 1, 2,...,15) and a corresponding second data point of data points in second memory space Y (16, 17, 18, 31); determining the parity of a data point memory index (col. 5 lines 10-18) corresponding to first and second data points; storing (Table II in col. 4), if parity is of a first parity value (Memory Location is even), the results of an FFT operation upon first data point at the memory

address in first memory space X front which first data point was fetched and the result of an FFT operation upon second data point at the memory address in second memory space Y from which second data point was fetched (PO0 in 24 & PO1 in 25; OP6 in 24 & OP7 in 25 ...); and storing (Table II in col. 4), if parity is of a second parity value (Memory Location is odd), the results of an FFT operation upon first data point at the memory address in second memory space Y from which second data point was fetched and the result of an FFT operation upon second data point at the memory address in first memory space X from which first data point was fetched (data results are swapped while storing such as OP3 in 24 & OP4 in 25, OP5 in 24 & OP6 in 25...). Hancke et al. do not disclose storing each of raw data points in a first memory space X and second memory space Y. The main different between the reference and the present application is the initial stage wherein all the input data points are stored in the first and second memory storage prior the first stage FFT operation in the present application and the input data points are stored temporarily in a third memory storage, passed through first stage of FFT operation, than stored in the first and second memory storage in the reference. However, storing all the input data points in the first and second memory space is conventional method in computing FFT as seen in Figure 1 of Avellar et al.'s invention. Avellar et al. disclose in Figure 1 an operation of FFT wherein the input data points are stored in the first and second memory space prior starting the first stage of FFT operation. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention is made to modify the Hancke et al.'s invention Figure 1 as seen in Avellar et al.'s invention by storing all the input data points directly into the first and second

memory spaces (24 and 25) because it would enable to increase the system performance by simultaneously processing the input data points.

Re claim 2, Hancke et al. further disclose any FFT stage Z subsequent to stage 0 and each FFT stage Z data point grouping comprising a first data point in first memory space X and a corresponding second data point in second memory space Y, storing the results of an FFT operation upon first data point at the memory address in first memory space X from which first data point was fetched and the results of an FFT operation upon second data point at the memory address in second memory space Y from which second data point was fetched (col. 6 lines 25-39).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chat C. Do whose telephone number is (703) 305-5655. The examiner can normally be reached on M => F from 7:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chaki Kakali can be reached on (703) 305-9662. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Chat C. Do
Examiner
Art Unit 2124

July 16, 2003

CHUONG DINH NGO
PRIMARY EXAMINER